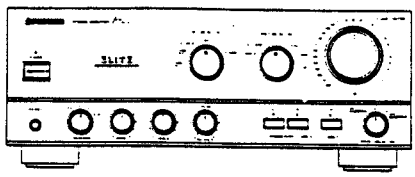
PIONEER®
The Art of Entertainment

Service Manual



ORDER NO.
ARP2240

STEREO AMPLIFIER

A-676

A-676-S

A−676 AND A−676−S HAVE THE FOLLOWING :

Type	Model		Power Requirement	Remarks
	A−676	A−676−S		
HE	○	—	AC220V−230V, 240V (switchable) *	
HB	○	—	AC220V−230V, 240V (switchable) *	
SD	○	—	AC110V, 120V−127V, 220V, 240V (switchable)	
HEWZ	○	○	AC220V−230V, 240V (switchable) *	

* Change the connection of the power transformer primary pins.

- **This manual is applicable to the A−676/HE, HB, SD, HEWZ and A−676−S/HEWZ types.**
- **As to the HB, SD, HEWZ and A−676−S/HEWZ types, refer to page 30.**
- **The A−676−S is the same as the A−676 except for color.**

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1. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

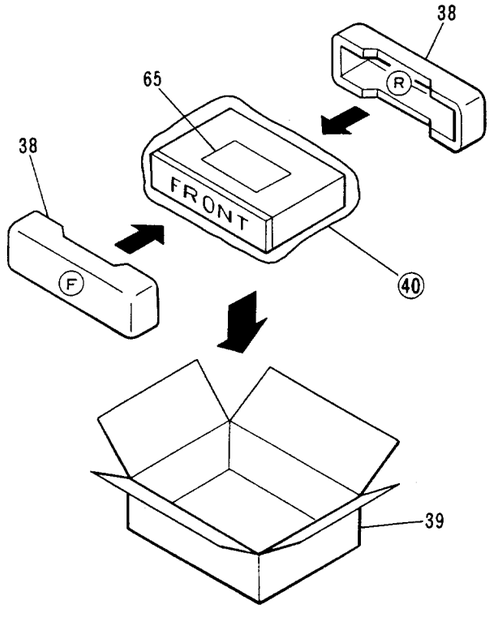
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts list of Exterior and Packing

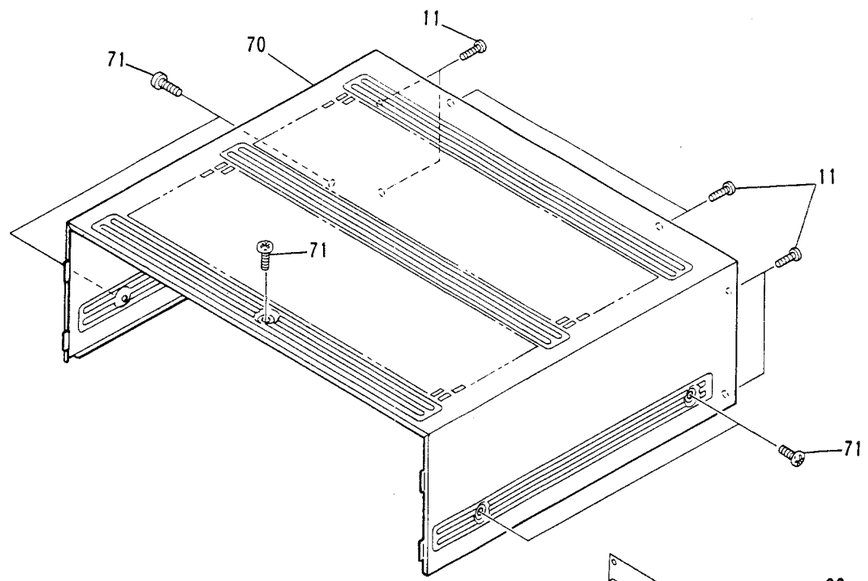
Mark	No.	Description	Parts No.
	1	ROTARY KNOB L (VOLUME)	AAB1222
	2	ROTARY KNOB M (REC SELECTOR, INPUT SELECTOR)	AAB1223
	3	ROTARY KNOB S (SPEAKERS, BASS, TREBLE, BALANCE, PHONO SELECTOR)	AAB1224
	4	PUSH KNOB (LOUDNESS, ADPT/TAPE3)	AAD1536
	5	DIRECT KNOB	AAD1560
	6	POWER KNOB	AAD2010
	7	REC OUT ASSEMBLY	
	8	NAME PLATE (METAL)	AAM1029
	9	SCREW	ABA−298
	10	SCREW (STEEL)	ABA1004
	11	SCREW (STEEL)	ABA1009
	12	SCREW (STEEL)	ABA1011
	13	SCREW (STEEL)	ABA1014
	14	SCREW (STEEL)	ABA1047
	15	SCREW (STEEL)	ABA1048
	16	SCREW (STEEL)	ABA1050
	17	SCREW	ABA1056
	18	SCREW	ABA1082
	19	SCREW	ABA1088
	20	SPACER	ABF1002
	21	WASHER	ABF1017
	22	SPRING	ABH1033
	23	SPRING	ABH1034
	24	NUT	ABN−065
	25	FLANGE NUT M9	ABN−072
⚠	26	AC POWER CORD	ADG1049
	27	CUSHION C (RUBBER)	
	28	NYLON BINDER	
⊙	29	POWER R ASSEMBLY	AWZ3421
	30	STRAIN RELIEF	AEC−882
	31	SPACER	
	32	NYLON RIVET	AEC1160
	33	INPUT SELECTOR ASSEMBLY	
	34	SPACER	
	35	SHEET	AEE1014
	36	SPEAKER SWITCH ASSEMBLY	
	37	CLAMPER	
	38	STYROL PROTECTOR	AHA1070
	39	PACKING CASE	AHD2069
	40	PACKING SHEET	
	41	TERMINAL SCREW	
	42	PANEL BASE	AMB1799
	43	FOOT	AMR1159
	44	INDICATING LENS	AMR1160
	45	HOLDER	AMR1178
	46	PUSH JOINT	
	47	HEAT SINK HOLDER F	
	48	HEAT SINK HOLDER R	
	49	RIGHT FRAME	
	50	TRANS. FRAME	
	51	FRONT PANEL	ANB1455
	52	REAR PANEL	
	53	PANEL STAY	
	54	POWER L ASSEMBLY	AWZ3418
	55	BOTTOM PLATE	
	56	VOLUME HOLDER	
	57	VOLUME HOLDER ASSEMBLY	
	58	POWER ASSEMBLY HOLDER (F)	
	59	POWER ASSEMBLY HOLDER (R)	
	60	EARTH PLATE	
	61	TRANSISTOR HOLDER	
	62	HEAT SINK	
	63	HEAT SINK	
	64	LONG SHAFT ASSEMBLY	ANL1040
	65	OPERATING INSTRUCTIONS (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1194
⊙	66	TONE AMP ASSEMBLY	AWZ3445
⊙	67	POWER SUPPLY ASSEMBLY	AWZ3426
	68	SPEAKER TERM. ASSEMBLY	
⊙	69	PHONO AMP ASSEMBLY	AWZ3436
	70	BONNET CASE	AZN1804

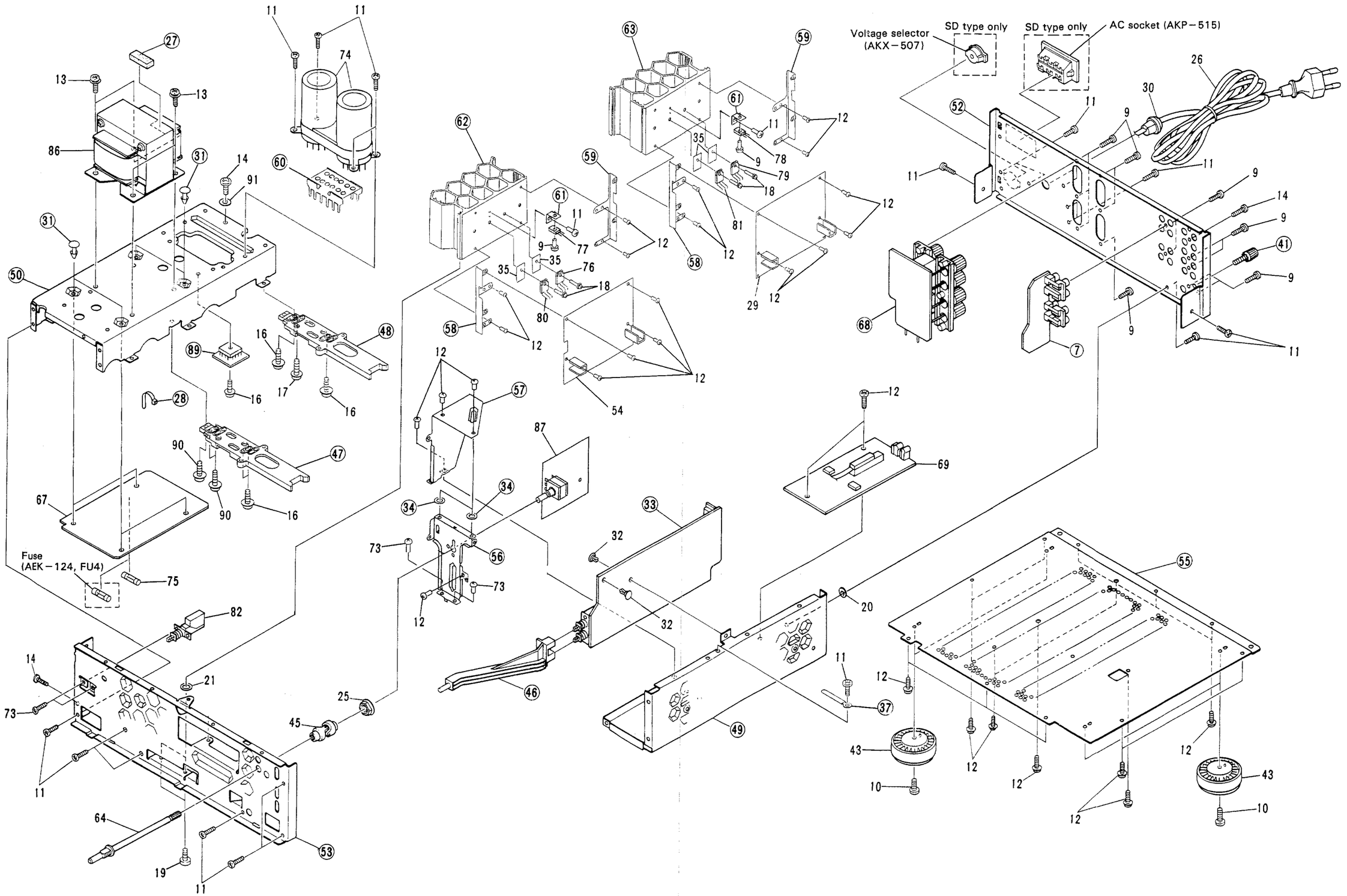
Mark	No.	Description	Parts No.
	71	SCREW	FBT40P080FZK
	72	NUT	NK90FCU
	73	SCREW	VMZ30P060FCU
⚠	74	ELECTROLYTIC CAPACIT (C1)	ACH1194
⚠	75	FUSE (T2.5A, FU3)	AEK−512
⚠	76	TRANSISTOR (Q1)	2SC3281
⚠	77	TRANSISTOR (Q155)	2SC4137
⚠	78	TRANSISTOR (Q156)	2SC4137
⚠	79	TRANSISTOR (Q2)	2SC3281
⚠	80	TRANSISTOR (Q3)	2SA1302
⚠	81	TRANSISTOR (Q4)	2SA1302
⚠	82	PUSH SWITCH (S1)	ASG1006
	83	SWITCH (S2)	ASU1039
	84	SWITCH (S3)	ASU1038
	85	SWITCH (S4)	ASU1026
⚠	86	POWER TRANSFORMER (T1)	ATS1352
⊙	87	VR ASSEMBLY	AWZ3441
	88	HEAD PHONE ASSEMBLY	
	89	DIODE ASSEMBLY	
	90	SCREW	ABA1129
	91	WASHER	ABE−053

• **Packing**

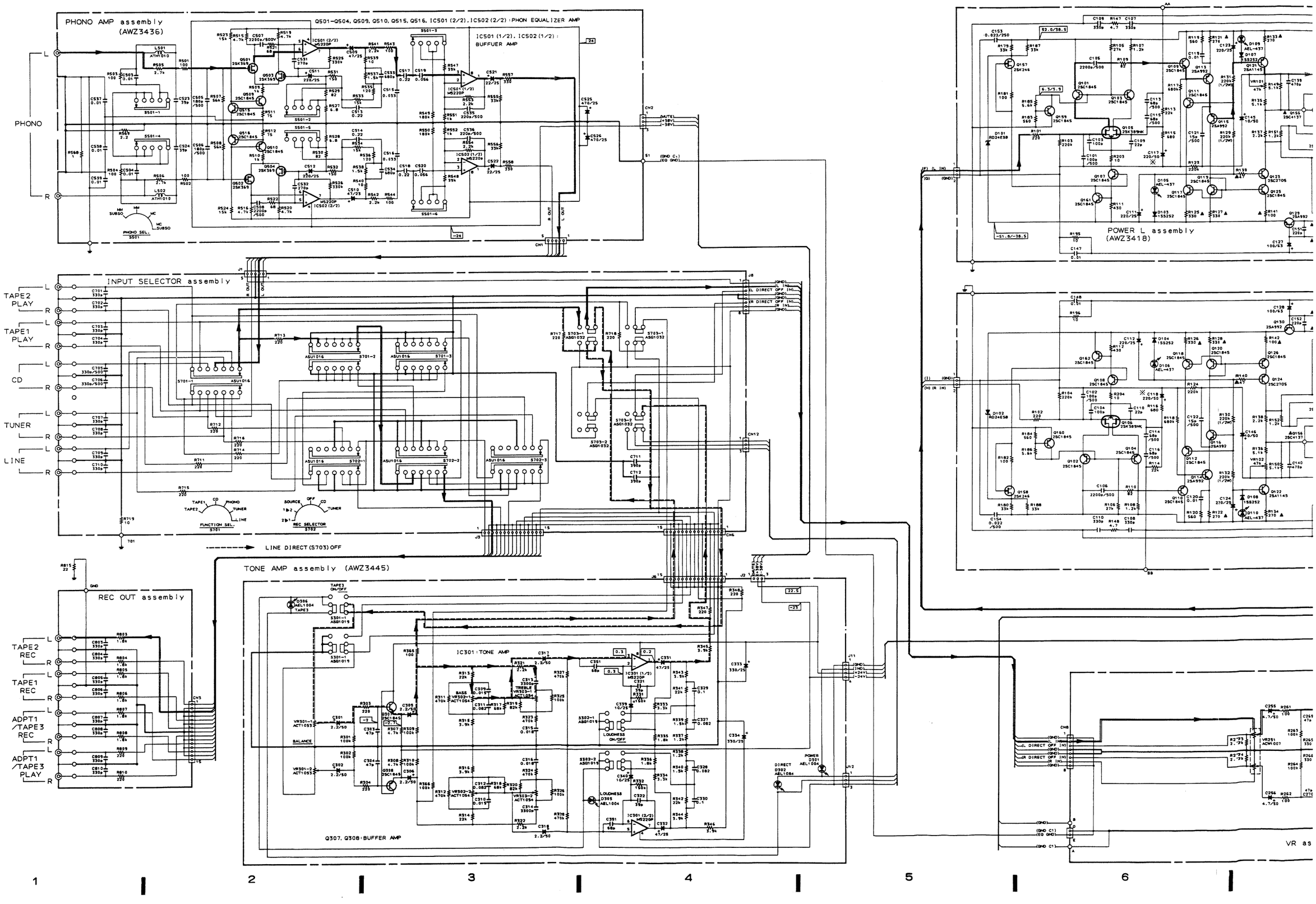


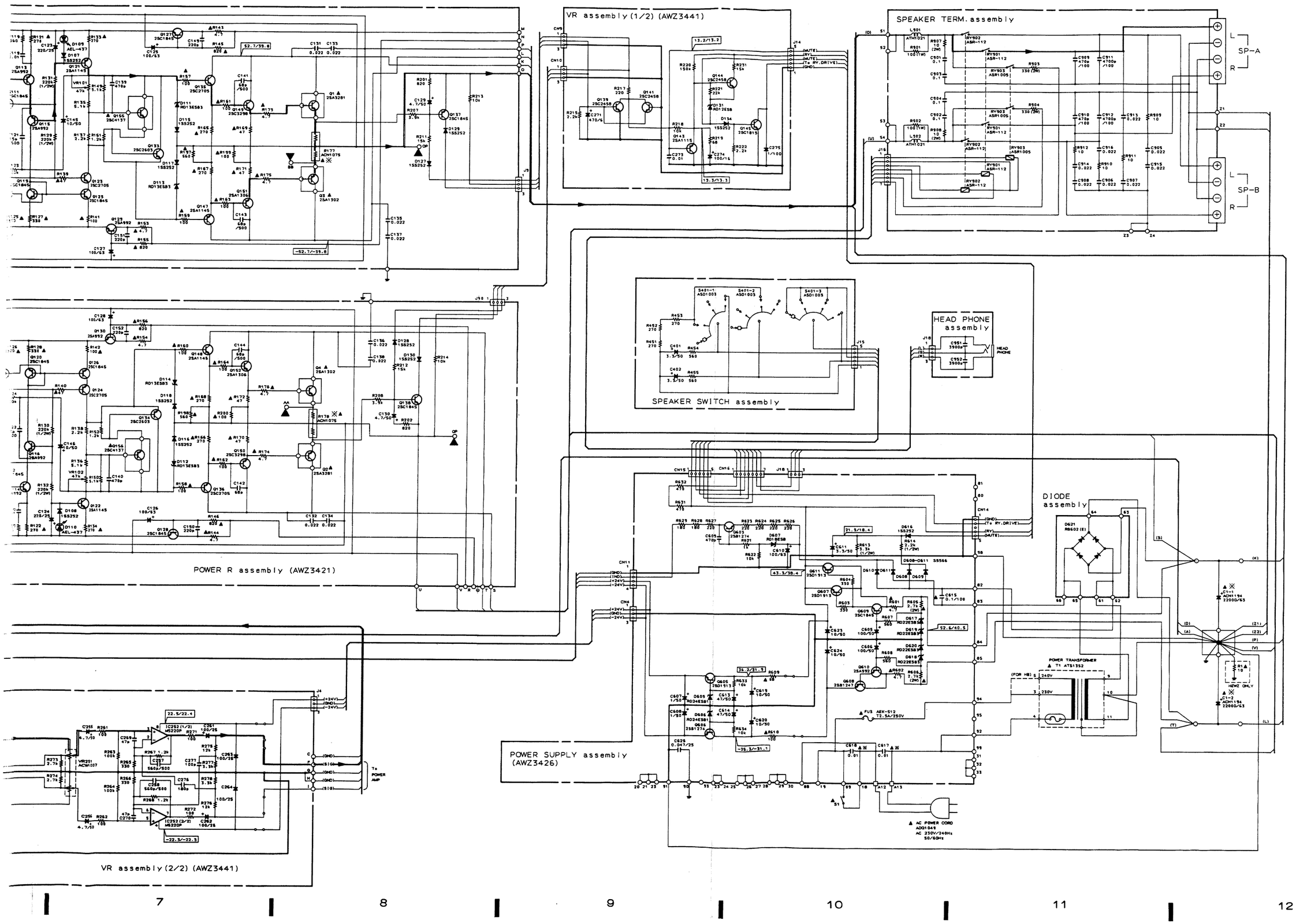
• **Exterior**



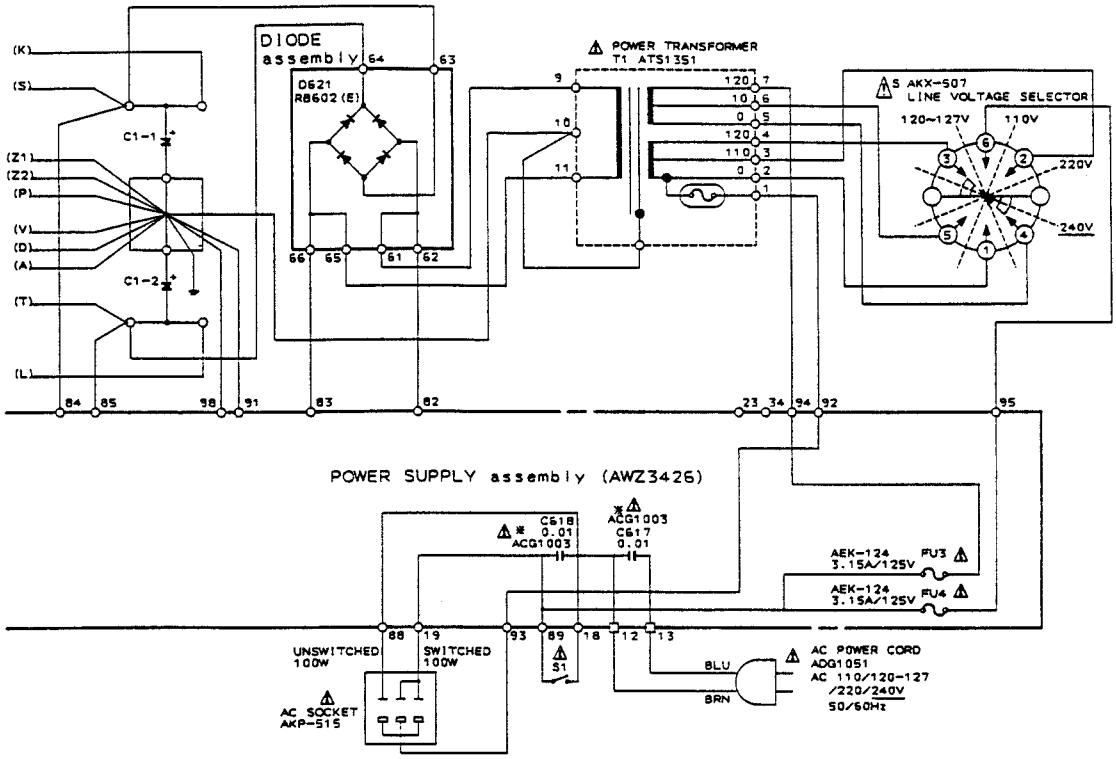

Voltage selector (AKX−507)
SD type only
SD type only
AC socket (AKP−515)
Fuse (AEK−124, FU4)

2. SCHEMATIC DIAGRAM




POWER R assembly (AWZ3421)
VR assembly (2/2) (AWZ3441)
VR assembly (1/2) (AWZ3441)
SPEAKER TERM. assembly
SPEAKER SWITCH assembly
HEAD PHONE assembly
POWER SUPPLY assembly (AWZ3426)
DIODE assembly
POWER TRANSFORMER
AC POWER CORD
SP-A
SP-B
To POWER AMP

• POWER SUPPLY SECTION (SD type)



1. RESISTORS:
   Indicated in Ω, ¼W, ⅛W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M); ±20% tolerance

2. CAPACITORS:
   Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
   Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
   : Signal voltage at (W + W 8Ω)output (1kHz)
   : DC voltage (V) at no input signal
   Value in ( ) is DC voltage at rated power.
   ⇦ mA : DC current at no input signal

4. OTHERS:
   ➡ : Signal route.
   ⊘ : Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

S1 POWER SW

TONE AMP assembly
S301 TAPE3 ON/OFF
S302 LOUDNESS ON/OFF

SPEAKER SWITCH assembly
S401 SPEAKER A,B(OFF/A/B/A+B)

INPUT SELECTOR assembly
S701 INPUT SELECTOR
S702 REC SELECTOR
S703 DIRECT

PHONO AMP assembly
S501 PHONO SELECTOR

LINE VOLTAGE SELECTION
(For A−676/HE, HB ,HEWZ and A−676−S/HEWZ types.)

Line voltage can be changed with the following steps.

1. Disconnect the AC Power cord.
2. Remove the top cover.
3. Change the connection of the power transformer primary pins.

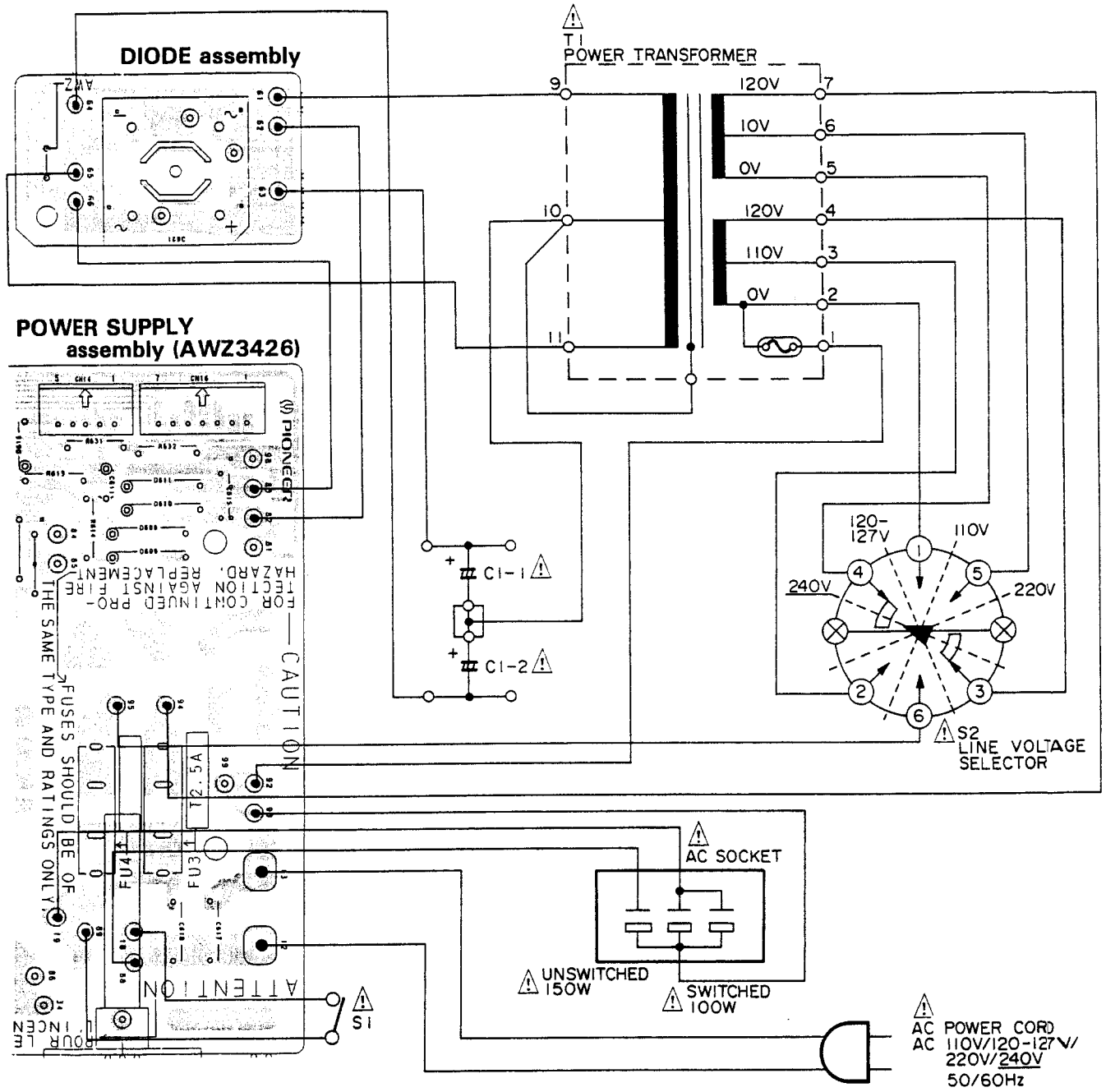
Voltage	Power transformer Pin No.
220V	3
240V	5

4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX−193	220V label
AAX−192	240V label

3. P.C.BOARDS CONNECTION DIAGRAM

• POWER SUPPLY SECTION (SD type)



NOTE

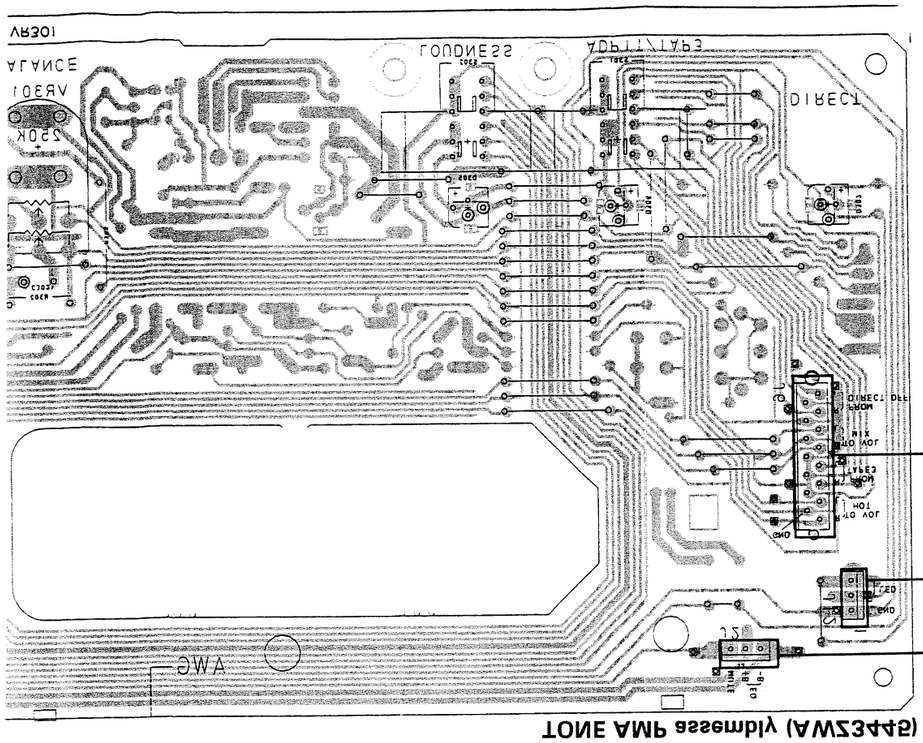
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

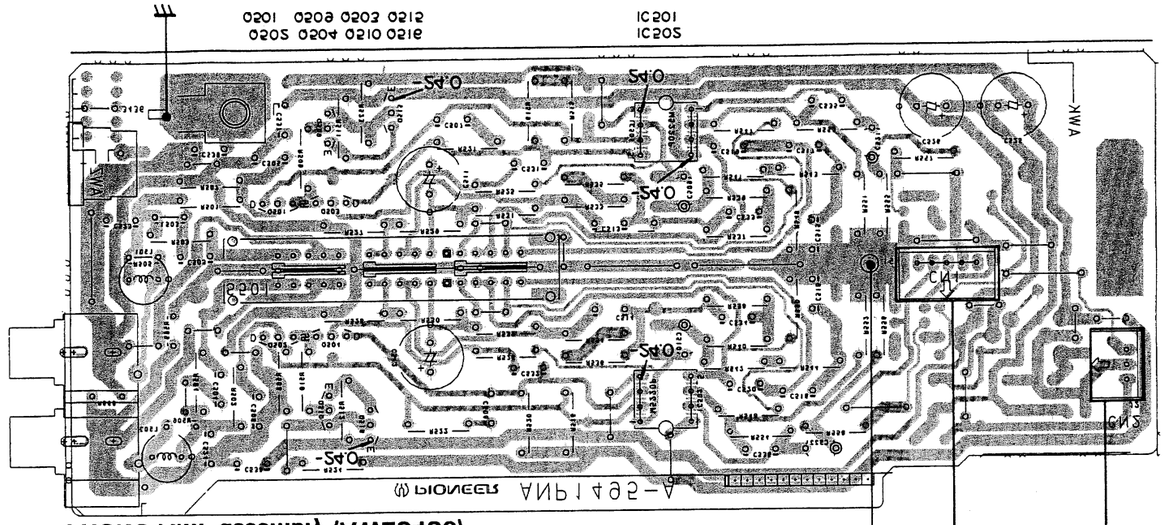
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

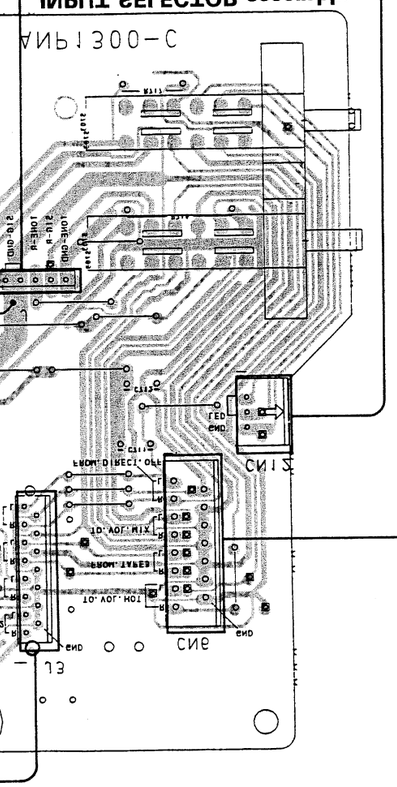
3. The capacitor terminal marked with ⊖(double circles) shows negative terminal.
4. The diode terminal marked with ⊖(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.



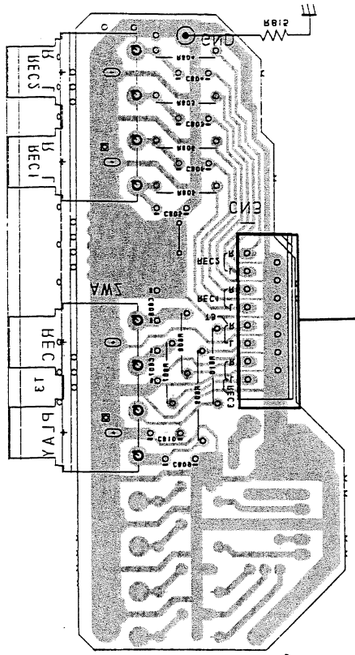
TONE AMP assembly (AWZ3448)



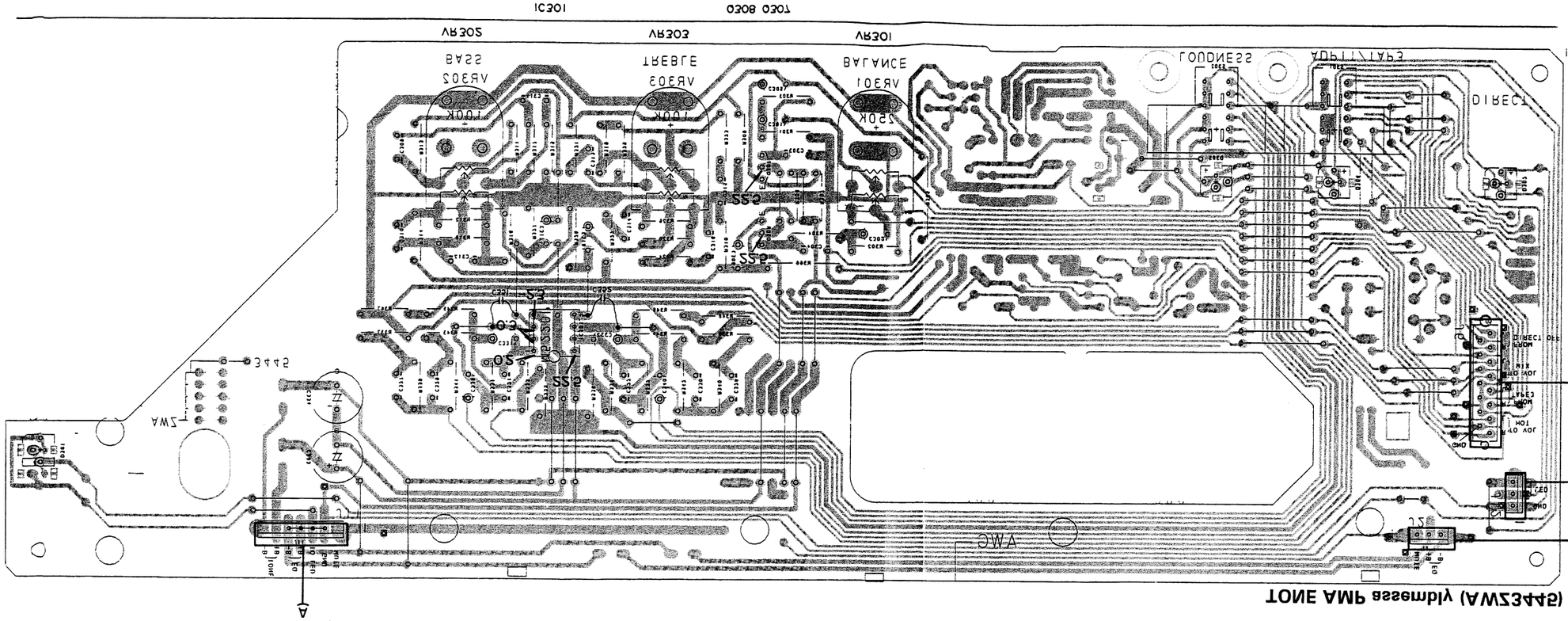
PHONO AMP assembly (AWZ3438)



INPUT SELECTOR assembly



REC OUT assembly



This P.C.B. connection diagram is viewed from the foil side.

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

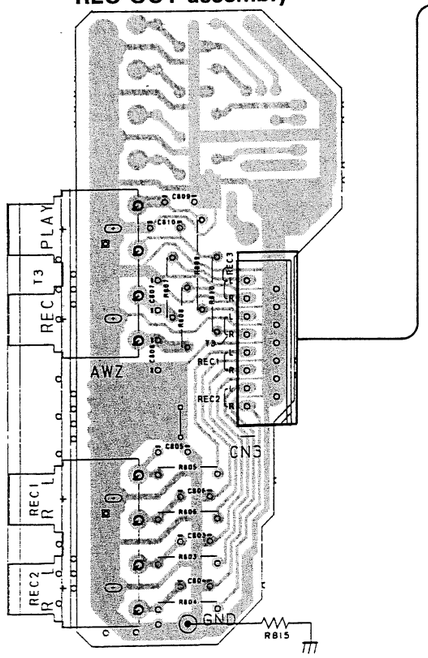
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 (E C B)	E C B or E C B	Transistor
Q215 (E C B)	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

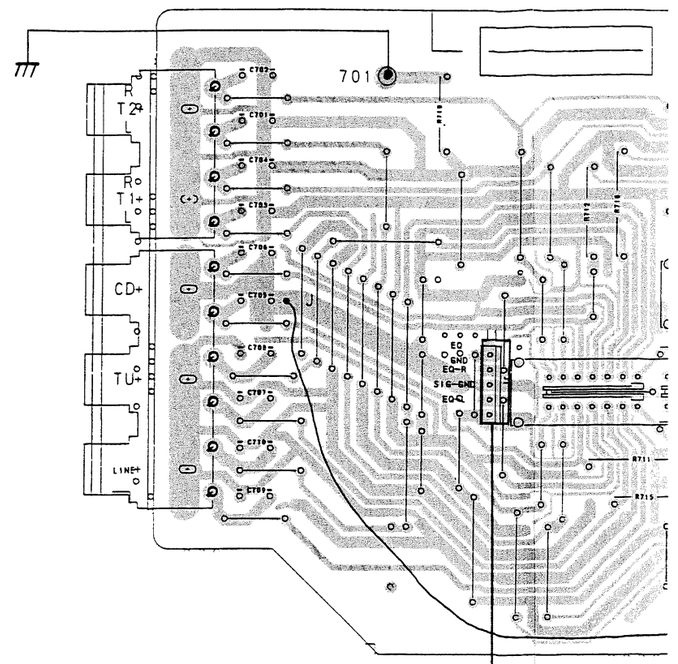
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

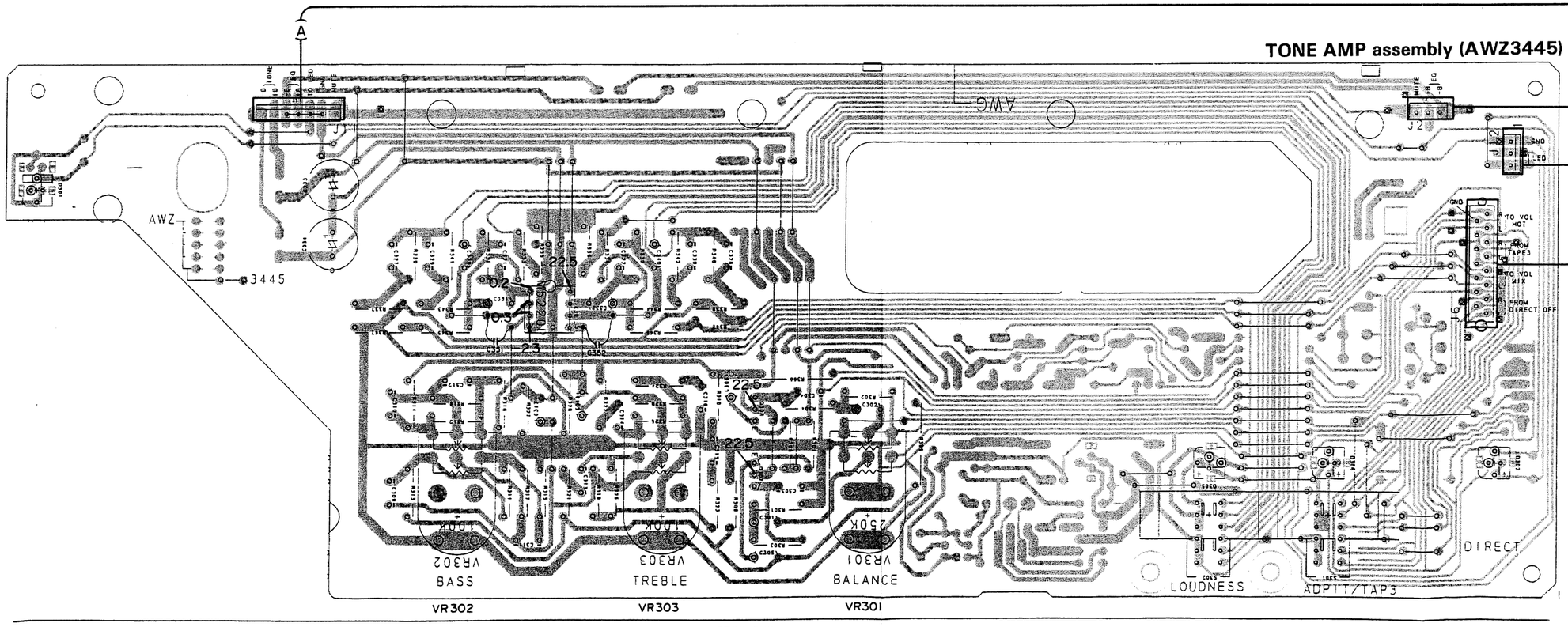
3. The capacitor terminal marked with ⊖ (double circles) shows negatine termianl.
4. The diode terminal marked with ⊖ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

REC OUT assembly

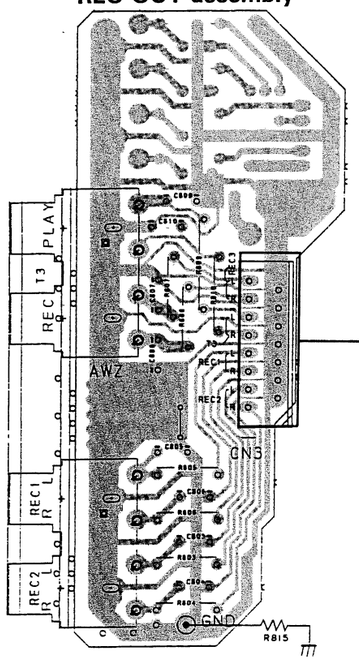




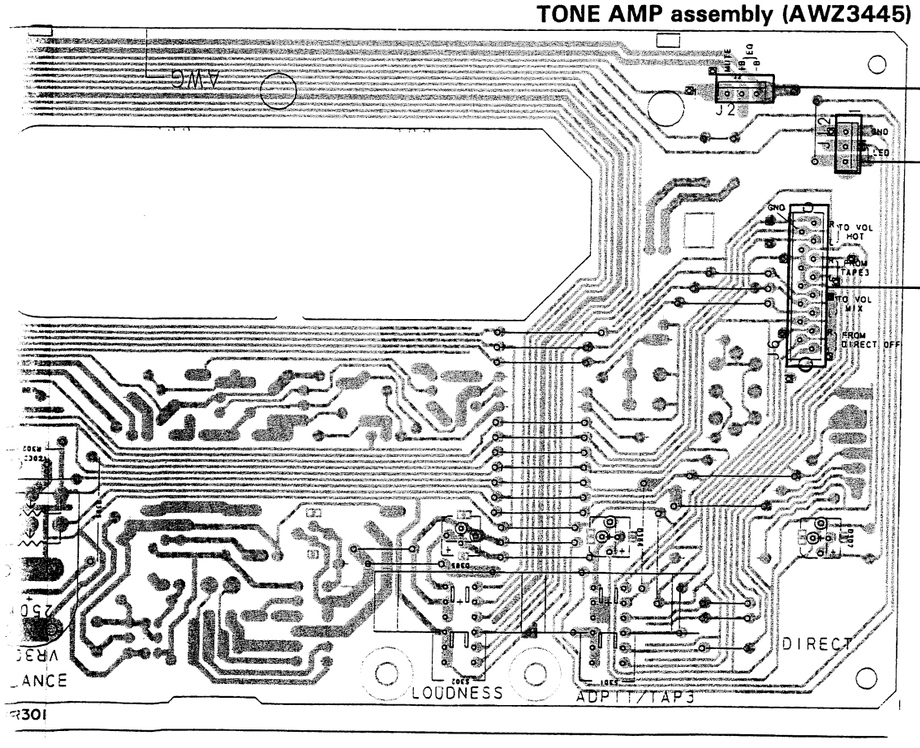
TONE AMP assembly (AWZ3445)

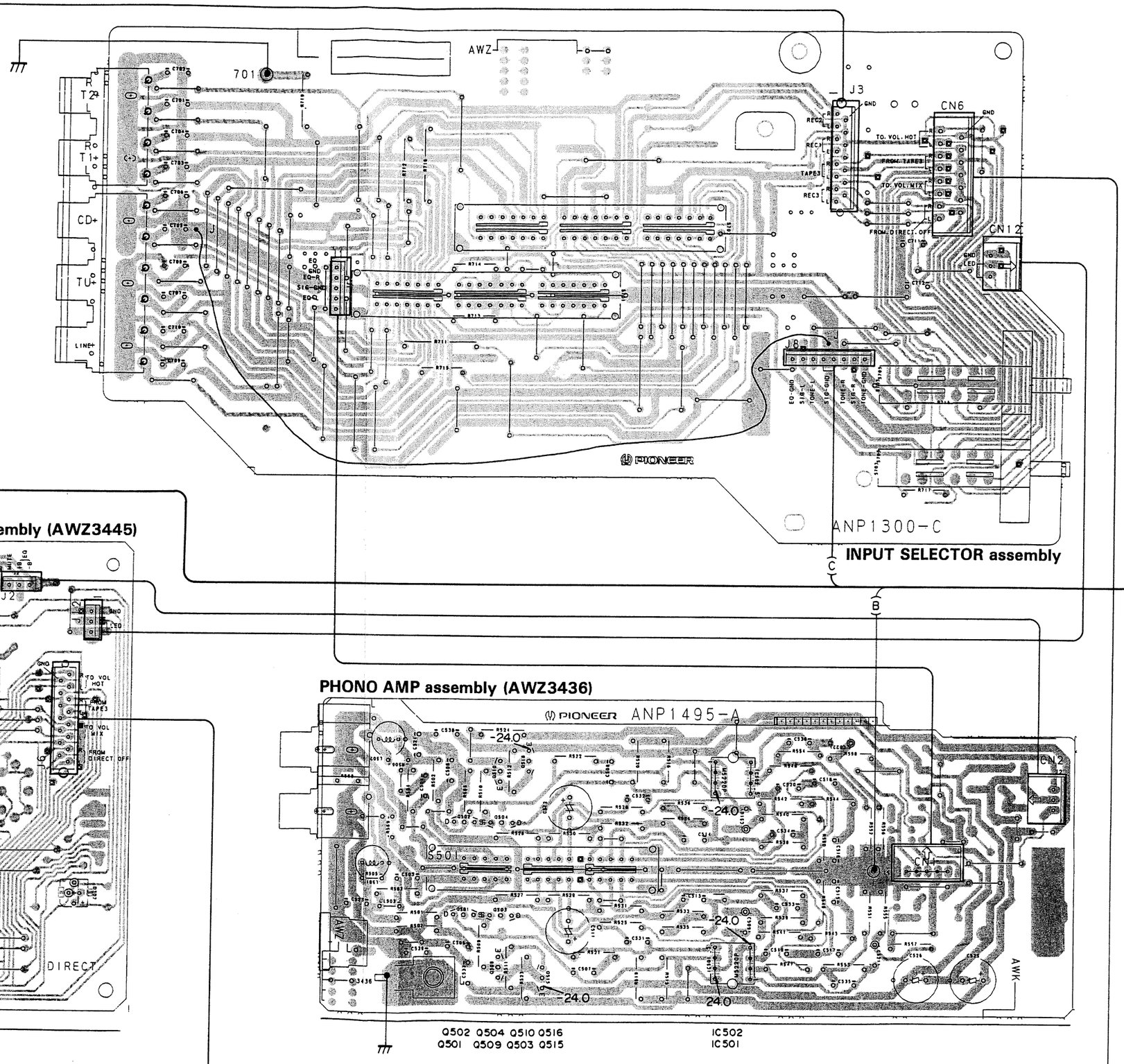


REC OUT assembly

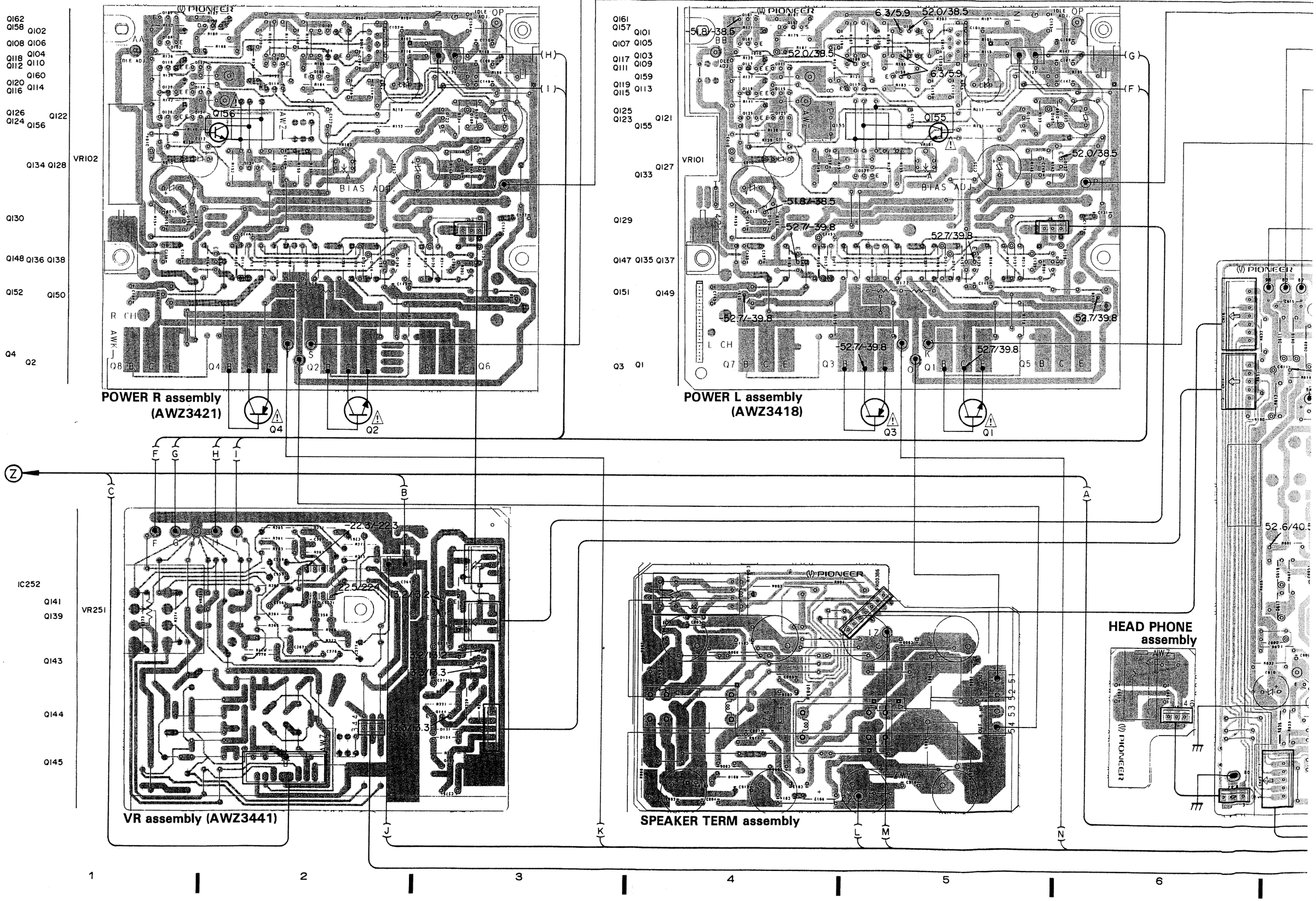


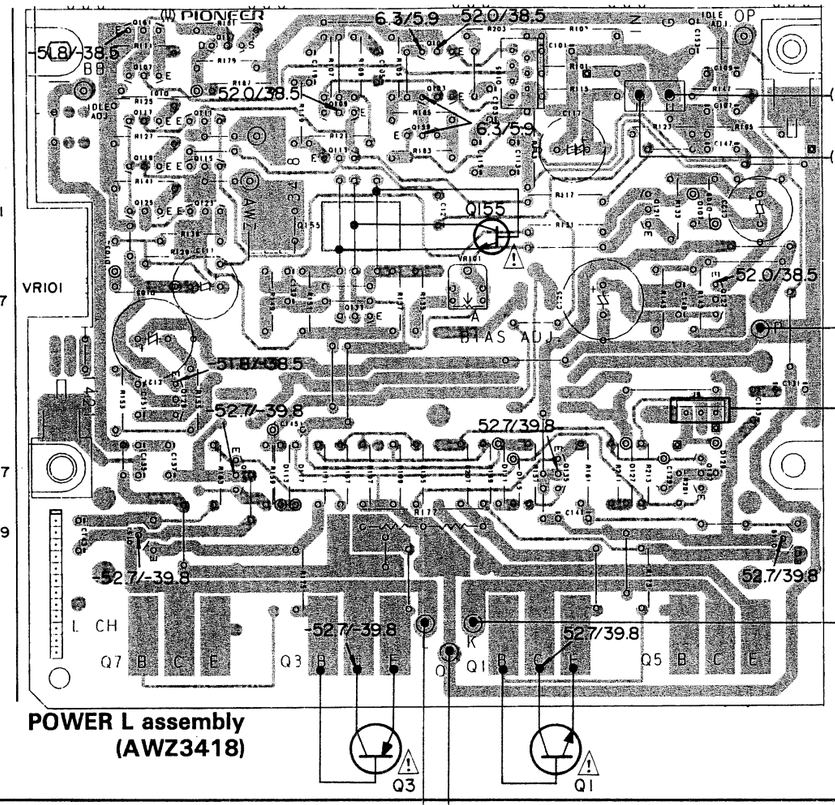
TONE AMP assembly (AWZ3445)



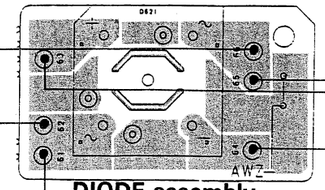


PHONO AMP assembly (AWZ3436)

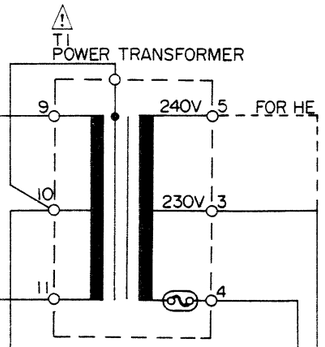

POWER R assembly
(AWZ3421)
POWER L assembly
(AWZ3418)
VR assembly (AWZ3441)
SPEAKER TERM assembly
HEAD PHONE
assembly
BIAS ADJ.
R CH
L CH
VR102
VR101
VR251
Q156
Q155
Q4
Q2
Q3
Q1
IC252
-52.7/-39.8
52.7/39.8
-22.3/-22.3
22.5/22.4
52.6/40.5



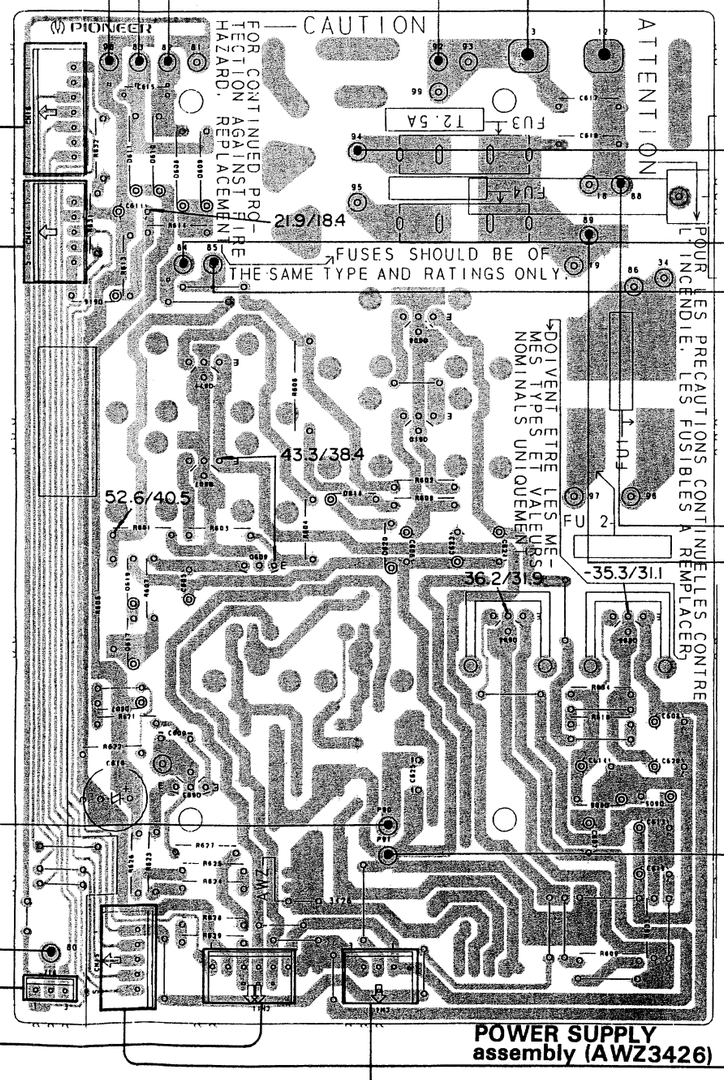
POWER L assembly (AWZ3418)



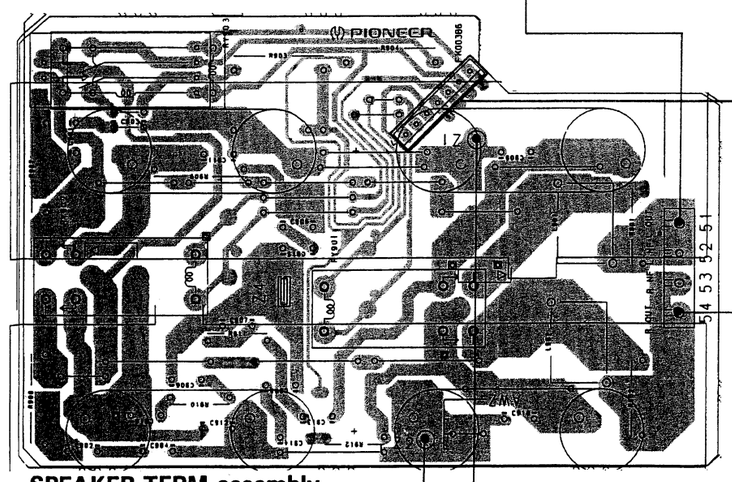
DIODE assembly



AC POWER CORD
AC 230-240V
50/60Hz

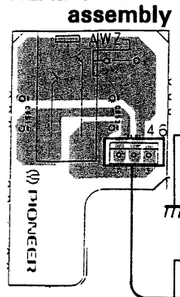


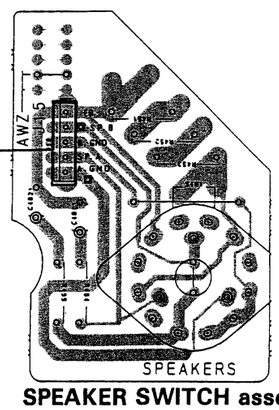
POWER SUPPLY assembly (AWZ3426)



SPEAKER TERM assembly

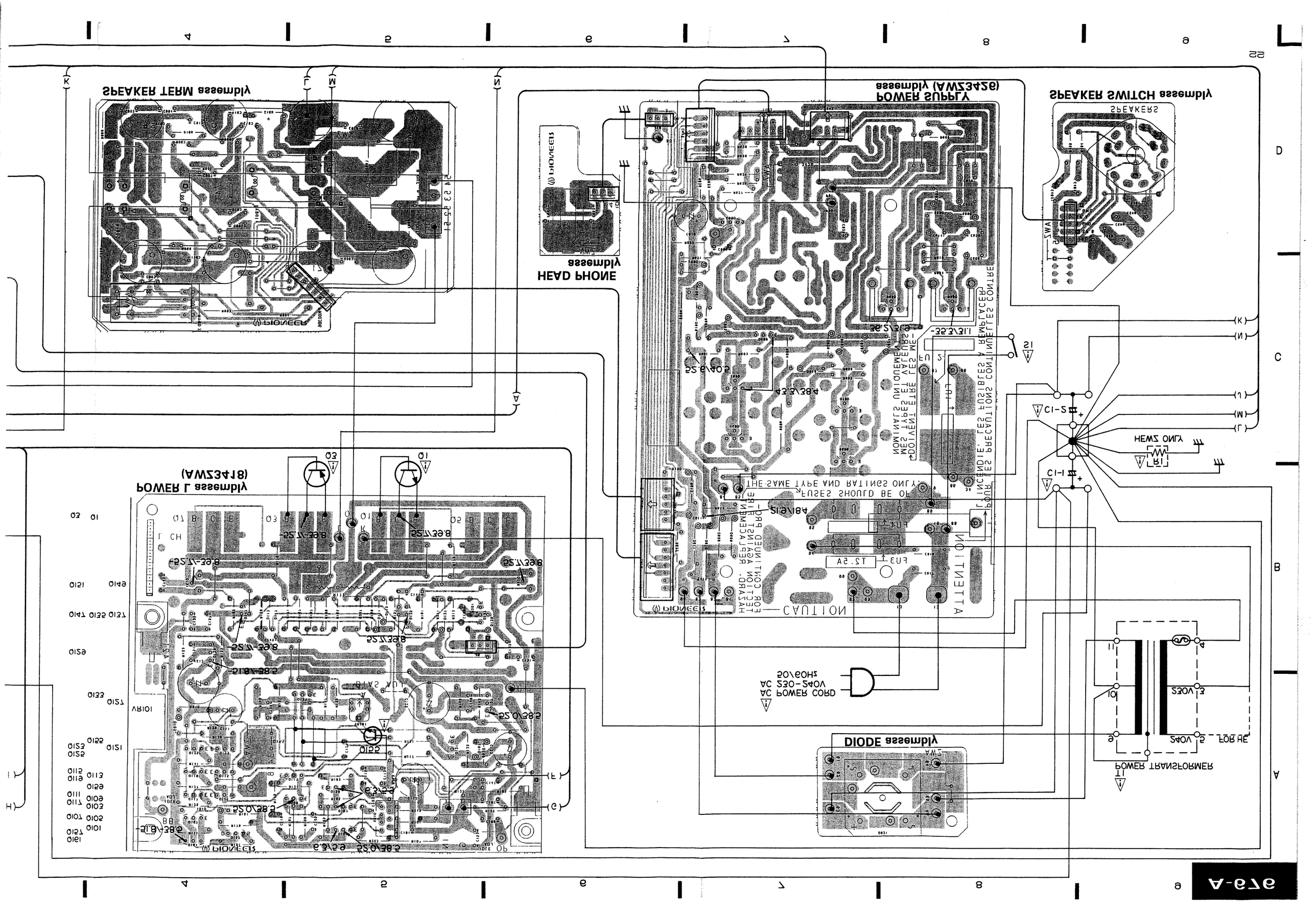
HEAD PHONE assembly





SPEAKER SWITCH assembly

C1-1
C1-2
R1
HEWZ ONLY
S1
(G)
(F)
(L)
(M)
(J)
(N)
(K)
A
K
L
M
N
Q3
Q1
4
5
6
7
8
9
A
B
C
D
21


SPEAKER TERM assemply
HEAD PHONE assemply
POWER SUPPLY assemply (AWZ345)
SPEAKER SWITCH assemply
POWER L assemply (8T45WA)
DIODE assemply
POWER TRANSFORMER
FOR HE
AC POWER CORD
CAUTION
THE SAME TYPE AND RATINGS ONLY.
FUSES SHOULD BE OF
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD
REPLACE ONLY WITH
SPEAKERS
HEMS ONLY
A-676

AV assembly (AWZ3447)

SPEAKER TERM assembly

HEAD PHONE assembly

POWER R assembly (AWZ3475)

POWER L assembly (AWZ3478)

4. PCB's PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

Mark No.	Description	Parts No.
◉ TONE AMP ASSEMBLY (AWZ3445)		
SEMICONDUCTORS		
IC301	OP−AMP−IC	M5220P
Q307, 308	TRANSISTOR	2SC1845
D301	LED (RED)	AEL1004
D302	LED	AEL1084
D305, 306	LED (RED)	AEL1004
SWITCHES		
S301, 302	PUSH SWITCH	ASG1019
CAPACITORS		
C301, 302	ELECTR.CAPACITOR	CEAS2R2M50
C303, 304	CERAMIC CAPACITOR	CCCSL470J50
C305, 306	ELECTR.CAPACITOR	CEAS2R2M50
C309, 310	AUDIO FILM CAPACITOR	CFTXA153J50
C311, 312	AUDIO FILM CAPACITOR	CFTXA823J50
C313, 314	MYLOR FILM CAPACITOR	CQMA332K50
C315, 316	AUDIO FILM CAPACITOR	CFTXA183J50
C317, 318	ELECTR.CAPACITOR	CEAS2R2M50
C321, 322	CERAMIC CAPACITOR	CCCSL390J50
C327, 328	AUDIO FILM CAPACITOR	CFTXA823J50
C329, 330	AUDIO FILM CAPACITOR	CFTXA104J50
C331, 332	ELECTR.CAPACITOR	CEAS470M25
C333, 334	ELECTR.CAPACITOR	CEAS331M25
C339, 340	ELECTR.CAPACITOR	CEAS100M25
C351, 352	CERAMIC CAPACITOR	CCDSL680J50
RESISTORS		
VR301	VARIABLE RESISTOR	ACT1053
VR302, 303	VARIABLE RESISTOR	ACT1054
	Other resistors	RD1/4PM□□□J
SPEAKER SWITCH ASSEMBLY		
SWITCH		
S401	SWITCH	ASD1003
CAPACITORS		
C401, 402	ELECTR.CAPACITOR	CEAS3R3M50
RESISTORS		
	All resistors	RD1/4PM□□□J
INPUT SELECTOR ASSEMBLY		
SWITCH		
S701, 702	SWITCH	ASU1016
S703	PUSH SWITCH	ASG1032
CAPACITORS		
C701−704	CERAMIC CAPACITOR	CKDYB331K50
C705, 706	CERAMIC CAPACITOR	CKCYB331K500
C707−710	CERAMIC CAPACITOR	CKDYB331K50
C711, 712	CERAMIC CAPACITOR	CKDYB391K50
RESISTORS		
	All resistors	RD1/4PM221J
OTHERS		
	PIN JACK (4P)	AKB1007
	PIN JACK (6P)	AKB1008
CN6	CONNECTOR (15P)	KPE15

Mark No.	Description	Parts No.
REC OUT ASSEMBLY		
CAPACITORS		
C803–810	CERAMIC CAPACITOR	CKDYB331K50
RESISTORS		
R807, 808	CARBON FILM RESISTOR	RD1/8PM182J
R809, 810	CARBON FILM RESISTOR	RD1/8PM221J
	Other resistors	RD1/4PM□□□J
OTHERS		
	PIN JACK (4P)	AKB1009
CN3	CONNECTOR (15P)	KPE15
⊙ POWER L ASSEMBLY (AWZ3418)		
SEMICONDUCTORS		
Q101, 103	TRANSISTOR	2SC1845
Q105	N–DUAL–FET	2SK389NK
Q107, 109	TRANSISTOR	2SC1845
Q111	TRANSISTOR	2SC1845
Q113, 115	TRANSISTOR	2SA992
Q117, 119	TRANSISTOR	2SC1845
Q121	TRANSISTOR	2SA1145
Q123	TRANSISTOR	2SC2705
Q125, 127	TRANSISTOR	2SC1845
Q129	TRANSISTOR	2SA992
Q133	TRANSISTOR	2SC2603
Q135	TRANSISTOR	2SC2705
Q137	TRANSISTOR	2SC1845
Q147	TRANSISTOR	2SA1145
Q149	TRANSISTOR	2SC3298
Q151	TRANSISTOR	2SA1306
Q157	N–FET	2SK246
Q159, 161	TRANSISTOR	2SC1845
D101	ZENER DIODE	RD24ESB
D103	DIODE	1SS252
D105	LED (RED)	AEL–437
D107	DIODE	1SS252
D109	LED (RED)	AEL–437
D111, 113	ZENER DIODE	RD13ESB3
D115, 117	DIODE	1SS252
D127, 129	DIODE	1SS252
CAPACITORS		
C101	CERAMIC CAPACITOR	CCCSL101K500
C103	CERAMIC CAPACITOR	CCCSL101J50
C105	CERAMIC CAPACITOR	CKCYB222K500
C107, 109	CERAMIC CAPACITOR	CKCYB331K50
C111	ELECTR.CAPACITOR	CEAS221M25
C113, 115	CERAMIC CAPACITOR	CCCSL680K500
C117	ELECTR. CAPACITOR (220/50)	ACH1058
C119	AUDIO FILM CAPACITOR	CFTXA103J50
C121	CERAMIC CAPACITOR	CCCSL150K500
C123	ELECTR.CAPACITOR	CEAS221M25
C125, 127	ELECTR. CAPACITOR	CEAS101M63
C129	ELECTR.CAPACITOR	CEAS4R7M50
C131, 133	CERAMIC CAPACITOR	CKDYF223Z50
C135, 137	CERAMIC CAPACITOR	CKDYF223Z50
C139	CERAMIC CAPACITOR	CKCYB471K50
C141, 143	CERAMIC CAPACITOR	CCCSL680K500
C145	ELECTR.CAPACITOR	CEAS100M50
C147	AUDIO FILM CAPACITOR	CFTXA103J50
C149, 151	CERAMIC CAPACITOR	CCCSL221J50
C153	MYLOR FILM CAPACITOR	CQMA223K250
RESISTORS		
VR101	VR	VRTM6H503
R101	CARBON FILM RESISTOR	RDR1/4PM221J
R103	CARBON FILM RESISTOR	RDR1/4PM224J
R113	CARBON FILM RESISTOR	RDR1/4PM223J
R115	CARBON FILM RESISTOR	RDR1/4PM681J
⚠ R121	FUSIBLE RESISTOR	RFA1/4PS271J
R123	CARBON FILM RESISTOR	RDR1/4PM224J
⚠ R125, 127	FUSIBLE RESISTOR	RFA1/4PS331J
R129, 131	CARBONFILM RESISTOR	RD1/2PM223J
⚠ R133	FUSIBLE RESISTOR	RFA1/4PS271J
⚠ R139	FUSIBLE RESISTOR	RFA1/4PS470J
⚠ R141	FUSIBLE RESISTOR	RFA1/4PS101J
⚠ R143	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠ R145	FUSIBLE RESISTOR	RFA1/4PS821J
⚠ R153	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠ R155	FUSIBLE RESISTOR	RFA1/4PS821J
⚠ R157, 159	FUSIBLE RESISTOR	RFA1/4PS101J
⚠ R161, 163	FUSIBLE RESISTOR	RFA1/4PS101J
⚠ R165, 167	FUSIBLE RESISTOR	RFA1/4PS271J
⚠ R169, 171	FUSIBLE RESISTOR	RFA1/4PS470J
⚠ R173, 175	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠ R177	RESISTOR (0.33, 5W)	ACN1075
⚠ R197	FUSIBLE RESISTOR	RFA1/4PS561J
⚠ R199	FUSIBLE RESISTOR	RFA1/4PS101J
R201	CARBON FILM RESISTOR	RD1/8PM821J
	Other resistors	RD1/4PM□□□J

Mark No.	Description	Parts No.
⊙ POWER R ASSEMBLY (AWZ3421)		
SEMICONDUCTORS		
Q102, 104	TRANSISTOR	2SC1845
Q106	N-DUAL-FET	2SK389NK
Q108, 110	TRANSISTOR	2SC1845
Q112	TRANSISTOR	2SC1845
Q114, 116	TRANSISTOR	2SA992
Q118, 120	TRANSISTOR	2SC1845
Q122	TRANSISTOR	2SA1145
Q124	TRANSISTOR	2SC2705
Q126, 128	TRANSISTOR	2SC1845
Q130	TRANSISTOR	2SA992
Q134	TRANSISTOR	2SC2603
Q136	TRANSISTOR	2SC2705
Q138	TRANSISTOR	2SC1845
Q148	TRANSISTOR	2SA1145
Q150	TRANSISTOR	2SC3298
Q152	TRANSISTOR	2SA1306
Q158	N-FET	2SK246
Q160, 162	TRANSISTOR	2SC1845
D102	ZENER DIODE	RD24ESB
D104	DIODE	1SS252
D106	LED (RED)	AEL-437-O
D108	DIODE	1SS252
D110	LED (RED)	AEL-437-O
D112, 114	ZENER DIODE	RD13ESB3
D116, 118	DIODE	1SS252
D128, 130	DIODE	1SS252
CAPACITORS		
C102	CERAMIC CAPACITOR	CCCSL101K500
C104	CERAMIC CAPACITOR	CCCSL101J50
C106	CERAMIC CAPACITOR	CKCYB222K500
C108, 110	CERAMIC CAPACITOR	CKCYB331K50
C112	ELECTR.CAPACITOR	CEAS221M25
C114, 116	CERAMIC CAPACITOR	CCCSL680K500
C118	ELECTR. CAPACITOR (220/50)	ACH1058
C120	AUDIO FILM CAPACITOR	CFTXA103J50
C122	CERAMIC CAPACITOR	CCCSL150K500
C124	ELECTR.CAPACITOR	CEAS221M25
C126, 128	ELECTR.CAPACITOR	CEAS101M63
C130	ELECTR.CAPACITOR	CEAS4R7M50
C132, 134	CERAMIC CAPACITOR	CKDYF223Z50
C136, 138	CERAMIC CAPACITOR	CKDYF223Z50
C140	CERAMIC CAPACITOR	CKCYB471K50
C142, 144	CERAMIC CAPACITOR	CCCSL680K500
C146	ELECTR.CAPACITOR	CEAS100M50
C148	AUDIO FILM CAPACITOR	CFTXA103J50
C150, 152	CERAMIC CAPACITOR	CCCSL221J50
C154	MYLOR FILM CAPACITOR	CQMA223K250
RESISTORS		
VR102	VR	VRTM6H503
R102	CARBON FILM RESISTOR	RDR1/4PM221J
R104	CARBON FILM RESISTOR	RDR1/4PM224J
R114	CARBON FILM RESISTOR	RDR1/4PM223J
R116	CARBON FILM RESISTOR	RDR1/4PM681J
⚠ R122	FUSIBLE RESISTOR	RFA1/4PS271J
R124	CARBON FILM RESISTOR	RDR1/4PM224J
⚠ R126, 128	FUSIBLE RESISTOR	RFA1/4PS331J
R130, 132	CARBONFILM RESISTOR	RD1/2PM223J
⚠ R134	FUSIBLE RESISTOR	RFA1/4PS271J
⚠ R140	FUSIBLE RESISTOR	RFA1/4PS470J
⚠ R142	FUSIBLE RESISTOR	RFA1/4PS101J
⚠ R144	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠ R146	FUSIBLE RESISTOR	RFA1/4PS821J
⚠ R154	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠ R156	FUSIBLE RESISTOR	RFA1/4PS821J
⚠ R158, 160	FUSIBLE RESISTOR	RFA1/4PS101J
⚠ R162, 164	FUSIBLE RESISTOR	RFA1/4PS101J
⚠ R166, 168	FUSIBLE RESISTOR	RFA1/4PS271J
⚠ R170, 172	FUSIBLE RESISTOR	RFA1/4PS470J
⚠ R174, 176	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠ R178	RESISTOR (0.33, 5W)	ACN1075
⚠ R198	FUSIBLE RESISTOR	RFA1/4PS561J
⚠ R200	FUSIBLE RESISTOR	RFA1/4PS101J
R202	CARBONFILM RESISTOR	RD1/8PM821J
	Other resistors	RD1/4PM□□□J
⊙ POWER SUPPLY ASSEMBLY (AWZ3426)		
SEMICONDUCTORS		
Q603	TRANSISTOR	2SB1274
Q605	TRANSISTOR	2SD1913
Q606	TRANSISTOR	2SB1274
Q607	TRANSISTOR	2SD1913
Q608	TRANSISTOR	2SB1274
Q609	TRANSISTOR	2SC1845
Q610	TRANSISTOR	2SA992
Q611	TRANSISTOR	2SD1913

Mark No.	Description	Parts No.
D605, 606	ZENER DIODE	RD24ESB1
D607	ZENER DIODE	RD18ESB
D608−611	DIODE	S5566
D616	DIODE	1SS252
D617−620	ZENER DIODE	RD22ESB3
CAPACITORS		
C605, 606	ELECTR.CAPACITOR	CEAS101M50
C607, 608	ELECTR.CAPACITOR	CEAS010M50
C609	CERAMIC CAPACITOR	CKCYB471K50
C610	ELECTR.CAPACITOR	CEAS101M63
C611	ELECTR.CAPACITOR	CEAS3R3M50
C613, 614	ELECTR.CAPACITOR	CEAS470M50
⚠ C615	POLYESTER CAPACITOR	CQMXA104J100
⚠ C617, 618	CKA (0.01/AC400V)	ACG1003
C619, 620	ELECTR.CAPACITOR	CEAS100M50
C623, 624	ELECTR.CAPACITOR	CEAS100M50
C625	CERAMIC CAPACITOR	CKCYX473M25
RESISTORS		
⚠ R601,602	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠ R605, 606	METAL OXIDE RESISTOR	RS2LMF272J
⚠ R609, 610	FUSIBLE RESISTOR	RFA1/4PS680J
R613	CARBON FILM RESISTOR	RD1/2PM332J
R614	CARBON FILM RESISTOR	RD1/2PM222J
R622	CARBON FILM RESISTOR	RD1/2PM103J
	Other resistors	RD1/4PM□□□J
OTHERS		
CN11	CONNECTOR (4P)	KPC4
CN16	CONNECTOR (7P)	KPC7

SPEAKER TERM. ASSEMBLY

RELAIES		
RY901, 902	RELAY	ASR−112
RY903	RELAY	ASR1005
COILS		
L901, 902	COIL	ATH1021
CAPACITORS		
C901−904	AUDIO FILM CAPACITOR	CFTXA104J50
C905−908	AUDIO FILM CAPACITOR	CFTXA223J50
C909−912	POLYESTER CAPACITOR	CQMXA472J100
C913−916	AUDIO FILM CAPACITOR	CFTXA223J50
RESISTORS		
⚠ R901, 902	METAL OXIDE RESISTOR	RS1LMF101J
⚠ R903, 904	METAL OXIDE RESISTOR	RS2LMF331J
⚠ R907, 908	METAL OXIDE RESISTOR	RS2LMF100J
R909−912	CARBON FILM RESISTOR	RD1/4PM100J
OTHERS		
	SPEAKER TERMINAL 4−P	AKE1017

⊙ PHONO AMP ASSEMBLY (AWZ3436)

SEMICONDUCTORS		
IC501, 502	OP−AMP−IC	M5220P
Q501−504	N−FET	2SK369
Q509, 510	TRANSISTOR	2SC1845
Q515, 516	TRANSISTOR	2SC1845
SWITCH		
S501	SWITCH	ASU1008
COILS		
L501, 502	COIL	ATH1010
CAPACITORS		
C503, 504	AUDIO FILM CAPACITOR	CFTXA103J50
C505, 506	CERAMIC CAPACITOR	CCCSL181K500
C507, 508	CERAMIC CAPACITOR	CKCYB222K500
C509, 510	ELECTR. CAPACITOR	CEXA470M25
C511, 512	ELECTR. CAPACITOR	CEXA221M25
C513, 514	AUDIO FILM CAPACITOR	CFTXA224J50
C515, 516	AUDIO FILM CAPACITOR	CFTXA333J50
C517, 518	AUDIO FILM CAPACITOR	CFTXA224J50
C519, 520	AUDIO FILM CAPACITOR	CFTXA563J50

Mark No.	Description	Parts No.
C521, 522	ELECTR. CAPACITOR	CEXA220M25
C523, 524	CERAMIC CAPACITOR	CCDSL390J50
C525, 526	ELECTR. CAPACITOR	CEXA471M25
C531, 532	CERAMIC CAPACITOR	CCCSL271J50
C533, 534	CERAMIC CAPACITOR	CKCYB681K50
C535, 536	CERAMIC CAPACITOR	CCCSL221K500
C537, 538	CERAMIC CAPACITOR	CKCYF103Z50
C539	CERAMIC CAPACITOR	CKDYF103Z50
RESISTORS		
R505, 506	CARBON FILM RESISTOR	RD1/8PM272J
R527, 528	CARBON FILM RESISTOR	RDR1/4PM6R8F
R529, 530	CARBON FILM RESISTOR	RDR1/4PM820F
R533, 534	CARBON FILM RESISTOR	RDR1/4PM153F
R537, 538	CARBON FILM RESISTOR	RDR1/4PM152F
R541, 542	CARBON FILM RESISTOR	RDR1/4PM222F
R568	CARBON FILM RESISTOR	RD1/8PM010J
R569	CARBON FILM RESISTOR	RD1/8PM2R2J
	Other resistors	RD1/4PM□□□J
OTHERS		
	PIN JACK (1P)	AKB1025
	PIN JACK (1P)	AKB1026

⊙ VR ASSEMBLY (AWZ3441)

SEMICONDUCTORS

IC252	OP−AMP−IC	M5220P
Q139, 141	TRANSISTOR	2SC2458
Q143	TRANSISTOR	2SA1115
Q144	TRANSISTOR	2SC2458
Q145	TRANSISTOR	2SC1815
D131	ZENER DIODE	RD12ESB
D134	DIODE	1SS252

Mark No.	Description	Parts No.
CAPACITORS		
C255, 256	ELECTR. CAPACITOR	CEXA4R7M50
C257, 258	CERAMIC CAPACITOR	CKCYB561K500
C261, 262	ELECTR. CAPACITOR	CEXA101M25
C263, 264	ELECTR.CAPACITOR	CEAS101M25
C269, 270	CERAMIC CAPACITOR	CCCSL470J50
C271	ELECTR. CAPACITOR	CEAS471M6
C273	CERAMIC CAPACITOR	CKDYF103Z50
C274	ELECTR.CAPACITOR	CEAS101M16
C275	ELECTR.CAPACITOR	CEAS010M100
C276	CERAMIC CAPACITOR	CCCSL181J50
C277	CERAMIC CAPACITOR	CCCSL151J50
RESISTORS		
VR251	VARIABLE RESISTOR	ACW1007
R215	CARBON FILM RESISTOR	RD1/8PM222J
R217	FUSIBLE RESISTOR	RFA1/4PS221J
R221	CARBON FILM RESISTOR	RD1/8PM223J
R222	CARBON FILM RESISTOR	RD1/8PM222J
R231	CARBON FILM RESISTOR	RD1/8PM153J
R261, 262	CARBON FILM RESISTOR	RDR1/4PM101J
R265, 266	CARBON FILM RESISTOR	RDR1/4PM331J
R267, 268	CARBON FILM RESISTOR	RDR1/4PM122J
R271, 272	CARBON FILM RESISTOR	RDR1/4PM101J
	Other resistors	RD1/4PM□□□J
OTHERS		
CN8	JUMPER CONNECTOR	KPC8

HEAD PHONE ASSEMBLY

CAPACITORS

C951, 952	CERAMIC CAPACITOR	CKCYB392K50

OTHERS

	JACK (HEAD PHONE)	AKN1002

DIODE ASSEMBLY

SEMICONDUCTOR

D621	DIODE	RB602(E)

5. FOR HB, SD, HEWZ AND A−676−S/HEWZ TYPES

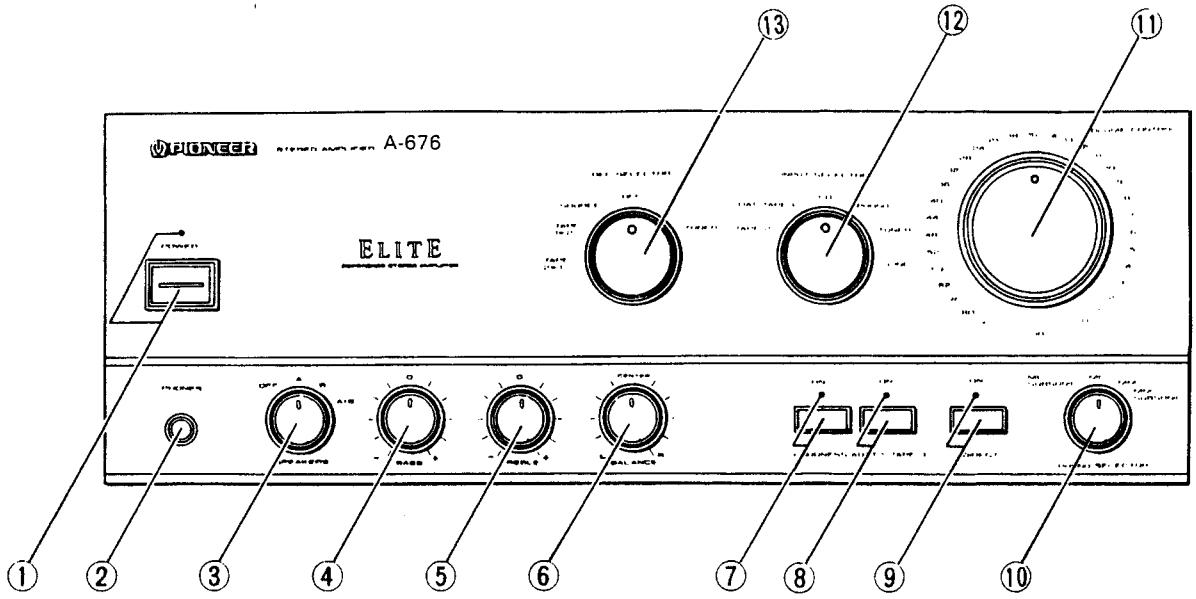
NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CONTRAST OF MISCELLANEOUS PARTS

The A−676/HB, SD, HEWZ and A−676−S/HEWZ types are the same as the A−676/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.					Remarks
		A−676/ HE type	A−676/ HB type	A−676/ SD type	A−676/ HEWZ type	A−676−S/ HEWZ type	
⚠	S Line voltage selector switch	.....	.....	AKX−507	.....	.....	
⚠	T1 Power transformer	ATS1352	ATS1352	ATS1351	ATS1352	ATS1352	
	R1 Carbon film resistor	.....	.....	.....	RD1/4PMF100J	RD1/4PMF100J	
⚠	FU3 Fuse (T2.5A/250V)	AEK−512	AEK−512	.....	AEK−512	AEK−512	
⚠	FU3 Fuse (3.15A/125V)	.....	.....	AEK−124	.....	.....	
⚠	FU4 Fuse (3.15A/125V)	.....	.....	AEK−124	.....	.....	
⚠	AC Power cord	ADG1049	ADG1087	ADG1051	ADG1049	ADG1049	
⚠	AC socket (OUTLET, 3P)	.....	.....	AKP−515	.....	.....	
	Rotary knob L	AAB1222	AAB1222	AAB1222	AAB1222	AAB1225	
	Rotary knob M	AAB1223	AAB1223	AAB1223	AAB1223	AAB1226	
	Rotary knob S	AAB1224	AAB1224	AAB1224	AAB1224	AAB1240	
	Push knob	AAD1536	AAD1536	AAD1536	AAD1536	AAD1538	
	Direct knob	AAD1560	AAD1560	AAD1560	AAD1560	AAD1562	
	Power knob	AAD2010	AAD2010	AAD2010	AAD2010	AAD2041	
	Panel base	AMB1799	AMB1799	AMB1799	AMB1799	AMB1800	
	Front panel	ANB1455	ANB1455	ANB1455	ANB1455	ANB1456	
	Bonnet case	AZN1804	AZN1804	AZN1804	AZN1804	ANE1305	
	Screw	FBT40P080FZK	FBT40P080FZK	FBT40P080FZK	FBT40P080FZK	FBT40P080FCR	
	Packing case	AHD2069	AHD2069	AHD2069	AHD2069	AHD2070	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1194	.....	.....	.....	.....	
	Operating instructions (English, Spanish)	.....	ARE1204	ARE1204	.....	.....	
	Operating instructions (German)	.....	.....	.....	ARC1268	ARC1268	

6. PANEL FACILITIES



① POWER switch/indicator

Press to turn power to the unit ON and OFF.
When the power is ON, the indicator lights.

② PHONES jack

When using headphones, insert the plug into this jack.

③ SPEAKERS selector switch

Use this switch to listen to the speaker systems connected to SPEAKERS terminals.

OFF:

Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

A:

For reproduction of sound with the speaker system connected to the SPEAKERS A terminals.

B:

For reproduction of sound with the speaker system connected to the SPEAKERS B terminals.

A + B:

For reproduction of sound with the speaker systems connected to SPEAKERS A and B terminals.

④ BASS tone control

Use to adjust the low-frequency tone at low volume level. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTE:

- *This function does not operate when the DIRECT button is in the ON position.*
- *At volume levels lower than "32," the set tone control effect is obtained.*
- *At volume levels higher than "32," the effect becomes increasingly weaker.*

⑤ TREBLE tone control

Use to adjust the high-frequency tone at low volume level. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTE:

- *This function does not operate when the DIRECT button is in the ON position.*
- *At volume levels lower than "32," the set tone control effect is obtained.*
- *At volume levels higher than "32," the effect becomes increasingly weaker.*

⑥ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the LEFT position and if the left side is louder, turn toward the RIGHT position.

NOTE:

This function does not operate when the DIRECT button is in the ON position.

⑦ LOUDNESS button/indicator

Use when listening at low volume levels.

ON:

The indicator lights: Boosts low and high frequencies to give added punch to playback at low volume.

OFF:

The indicator goes off: Should normally be left in this position.

NOTE:

This button does not operate when the DIRECT button is in the ON position.

⑧ ADPT /TAPE 3 button/indicator

Use this button to listen to tape playback, or to monitor a tape recording.

ON:

The indicator lights: Press when listening to the playback sound of the cassette deck or the adaptor connected to the ADPT /TAPE 3 IN/PLAY jacks, or to monitor the sound being recorded on the cassette deck connected to the ADPT /TAPE 3 OUT/REC jacks.

OFF:

The indicator goes off: Normally leave the button in this position.

NOTE:

When the DIRECT button is set to ON, this function does not operate and no signal is output at the ADPT /TAPE 3 OUT/REC jacks.

⑨ DIRECT button/indicator

Use this button when you wish to bypass the various frequency adjusting circuits and adaptor jacks (ADPT /TAPE 3, ADPT 2, BASS, TREBLE, BALANCE, LOUDNESS).

ON:

When this button is in this position, the indicator lights and the signals input from the input jacks are reproduced without passing through the various frequency-adjusting circuits. This results in flat, pure sound which is a more faithful reproduction of the input source.

OFF:

When the button is in this position the indicator goes out and the signal passes through the various frequency adjusting circuits.

⑩ PHONO SELECTOR switch

Set in accordance with the type of cartridge used in your turntable.

MM:

Set to this position when using a moving magnet cartridge, or a MC (moving coil) cartridge with high output of 1 mV or more.

MC:

Set to this position when using a moving coil cartridge.

MM SUBSONIC/MC SUBSONIC:

Subsonic filter for moving coil or moving magnet cartridges to cut ultralow frequency noise less than 17 Hz generated when playing a warped record.

When using a high-output moving coil cartridge, set this switch to MM or MM SUBSONIC.

⑪ VOLUME CONTROL

Use to adjust volume level.

NOTE:

This unit is equipped with a circuit that attenuates the effect of tone and loudness controls as volume is turned up.

⑫ INPUT SELECTOR switch

Use to select playback source.

LINE:

Set to this position when listening to the programs from a component connected to the LINE jacks.

TUNER:

Set to this position when listening to AM or FM broadcasts with a tuner.

PHONO:

Set to this position when listening to record playback on a turntable.

CD:

Set to this position when listening to a compact disc playback with a CD player.

DAT/TAPE 1:

For playback with a cassette deck or digital audio tape deck connected to the DAT/TAPE 1 jacks.

TAPE 2:

For playback with a cassette deck connected to the TAPE 2 jacks.

⑬ REC SELECTOR switch

Switch to select recording signal. When set at other positions than SOURCE or OFF, signals can be recorded during playback of the equipment selected by INPUT SELECTOR switch.

TUNER:

To record from a TUNER.

CD:

To record from a CD player.

OFF:

In this position nothing from the REC jacks of DAT/TAPE 1 and TAPE 2 will be output. Select it when not recording; output to cassette decks will be disconnected, improving sound quality.

SOURCE:

To record the equipment selected by INPUT SELECTOR switch.

TAPE:

1 ► 2

To record (copy) from the cassette deck of DAT/TAPE 1 jacks, over to the cassette deck of TAPE 2 jacks.

2 ► 1

To record (copy) from the cassette deck of TAPE 2 jacks, over to the cassette deck of DAT/TAPE 1 jacks.

NOTE:

The REC SELECTOR switch has no effect on the recording output of the ADPT /TAPE 3 jacks.

7. SPECIFICATIONS

[A-676]

Continuous power output (both channels driven at 20 Hz to 20 kHz)**
U.K.model
T.H.D. 0.007%, 8 Ω ..... 70 W + 70 W*
T.H.D. 0.009%, 4 Ω ..... 95 W + 95 W*
Multi-voltage model
T.H.D. 0.007 %, 8 Ω ..... 80 W + 80 W*
T.H.D. 0.009 %, 4 Ω ..... 100 W + 100 W*
DIN Continuous power output (both channels driven at 1 kHz)
T.H.D. 1.0 %, 8 Ω ..... 80 W + 80 W
T.H.D. 1.0 %, 4 Ω ..... 120 W + 120 W
Power bandwidth
0.05 %, 8 Ω ..... 5 Hz – 80 kHz*
Damping factor
(1 kHz/20 Hz to 20 kHz), 8 Ω 150/70
Dynamic power output (on EIA dynamic test signal)
4 Ω/2 Ω ..... 150 W/200 W
Total harmonic distortion**
U.K. model
20 Hz to 20 kHz, 70 W, 8 Ω ..... 0.007 %*
20 Hz to 20 kHz, 95 W, 4 Ω ..... 0.009 %*
Multi-voltage model
20 Hz to 20 kHz, 80 W, 8 Ω ..... 0.007 %*
20 Hz to 20 kHz, 100 W, 4 Ω ..... 0.009 %*
Inter-modulation distortion (at rated output) ..... 0.007 %*
Input sensitivity/impedance
PHONO (MM) ..... 2.5 mV/50 kΩ
PHONO (MC) ..... 0.2 mV/100 Ω
CD, TUNER, LINE, TAPE ..... 150 mV/50 kΩ
PHONO overload level
1 kHz, T.H.D. 0.008 % (MM/MC) ..... 200 mV/19 mV
Output level/impedance
TAPE REC, ADAPTOR OUTPUT ..... 150 mV/2.2 kΩ
Frequency response
PHONO (MM), 20 Hz to 20 kHz ..... ± 0.2 dB
PHONO (MC), 20 Hz to 20 kHz ..... ± 0.3 dB
CD, TUNER, LINE, TAPE, 1 Hz to 150 kHz ..... $^{+0}_{-3}$ dB*
Tone control (volume control set at – 40 dB position)
BASS ..... ± 8 dB (100 Hz)
TREBLE ..... ± 8 dB (10 kHz)
Loudness contour (volume control set at – 40 dB position)
..... + 5 dB (100 Hz)/ + 3 dB (10 kHz)
Filter (SUBSONIC) ..... 17 Hz (12 dB/oct.)
Signal-to-Noise ratio (IHF short circuit, A network)
PHONO (MM, 5 mV input/MC, 0.5 mV input) ..... 94 dB/76 dB*
CD, TUNER, LINE, TAPE ..... 110 dB*
Signal-to-Noise ratio (DIN, continuous power/50 mW)
PHONO (MM) ..... 74 dB/65 dB*
CD, TUNER, LINE, TAPE ..... 92 dB/68 dB*

Power Supply/Miscellaneous

Power requirements
U.K. model ..... a.c. 240 Volts ~, 50/60 Hz
Multi-voltage models ..... AC 110/120 – 127/220/240V (switchable), 50/60 Hz
Power consumption ..... 650 W
AC outlets (Multi-voltage models only)
Switched (x 2) ..... 100 W
Unswitched (x 1) ..... 100 W
Dimensions ..... 420 (W) x 435 (D) x 162 (H) mm
16-9/16 (W) x 17-1/8 (D) x 6-3/8 (H) in
Weight (without package) ..... 12.8 kg (28 lbs 4 oz)

Accessories

Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

* When the DIRECT button to ON.
** Measured by Audio Spectrum Analyzer.

8. ADJUSTMENTS

■ IDLE CURRENT ADJUSTMENT

1. Set the VOLUME CONTROL to minimum.
2. Set the POWER switch to ON.
3. Adjust VR101 (VR102) so that the voltage between OP and BB(AA) becomes $11^{+8.8}_{-3.3}$ mV.

NOTE :
After tuning on the power, wait at least 30 minutes before adjustment.

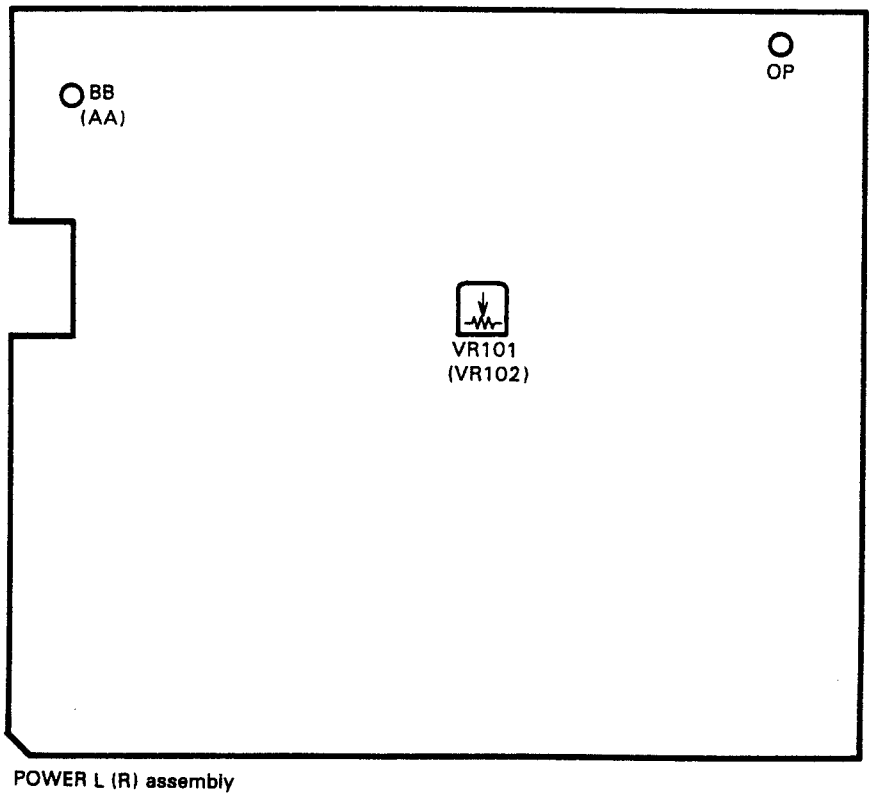


Fig. 1 Adjustment point